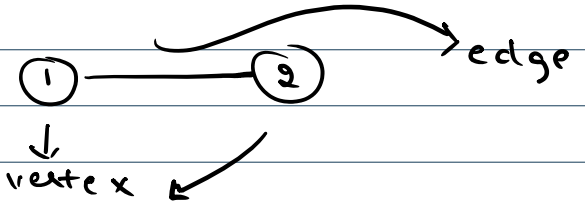
06 December 2025 10:12

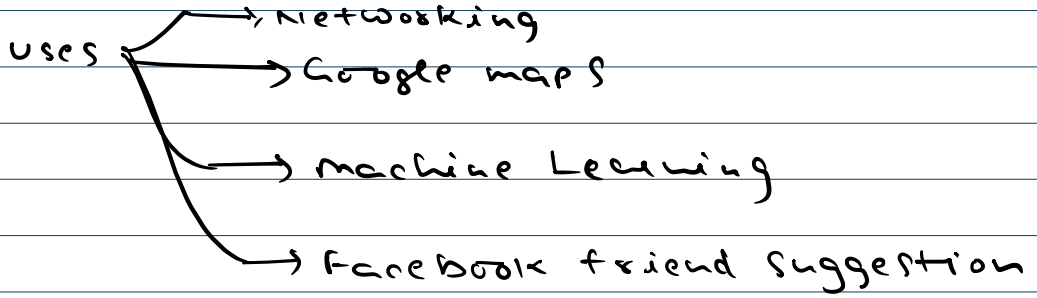
Graphs

It is a finite collection of vertices (nodes) and edges.



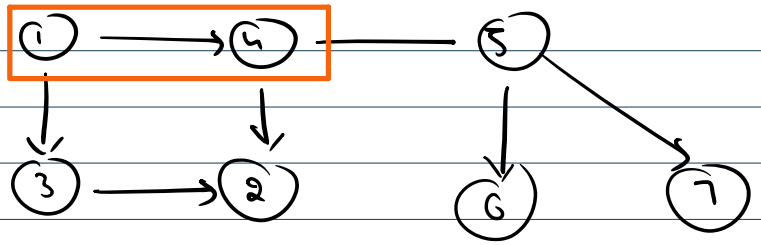
vertex → point where data is stored

edge → link that connects two nodes

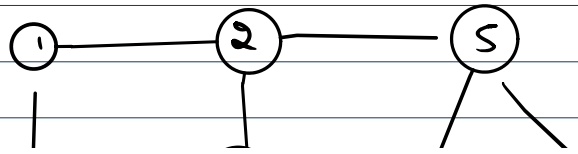


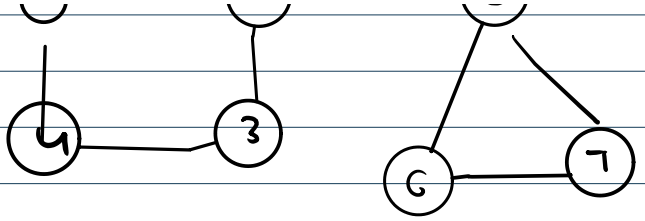
Types of Graph

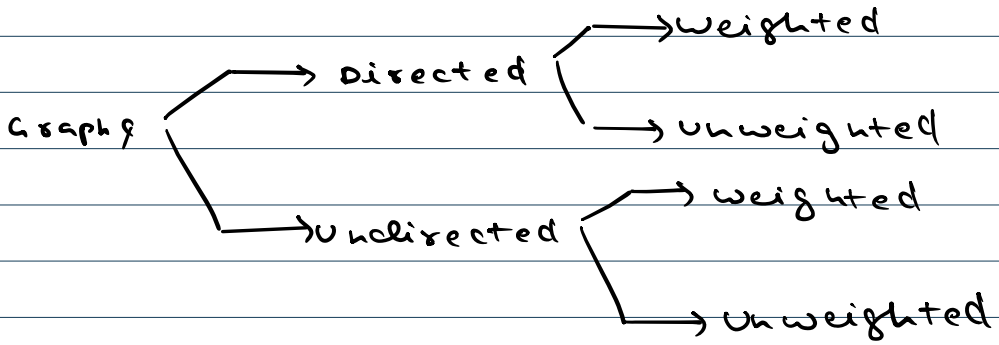
1. Directed graph



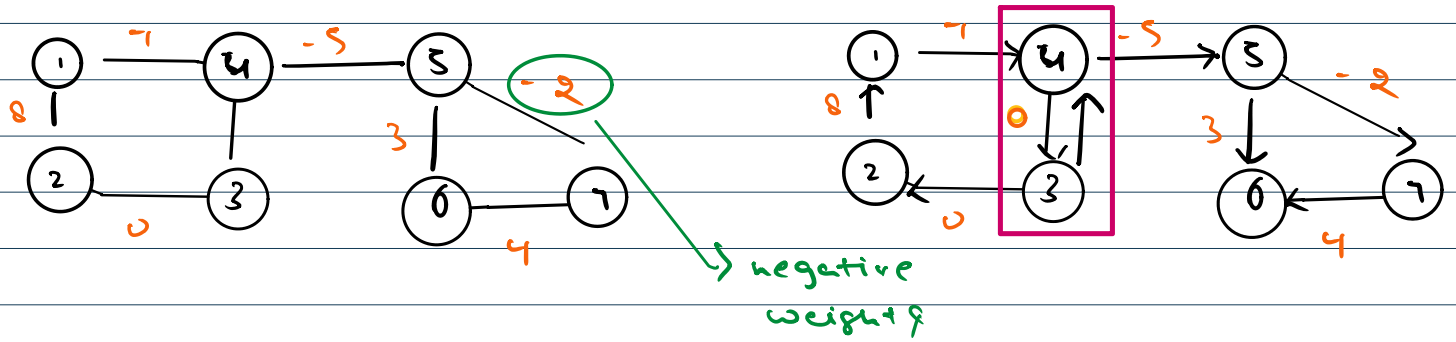
2. Undirected graph



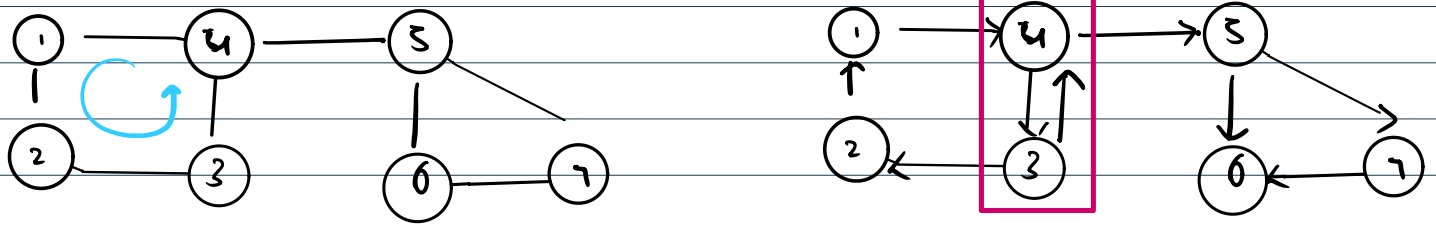




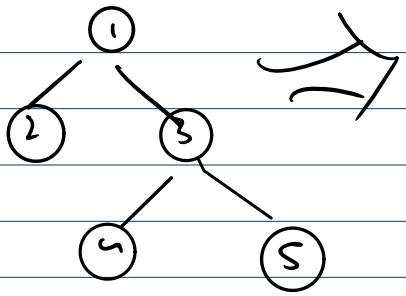
Weighted graph



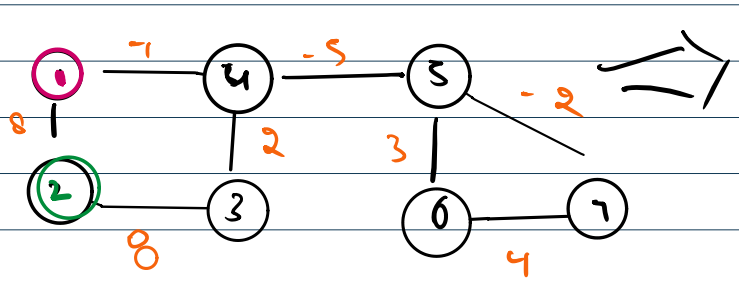
Unweighted graph



How can we represent a graph ?



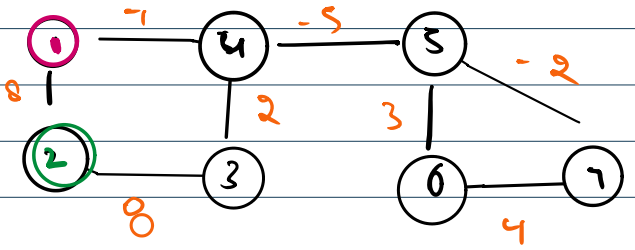
parent-child relation



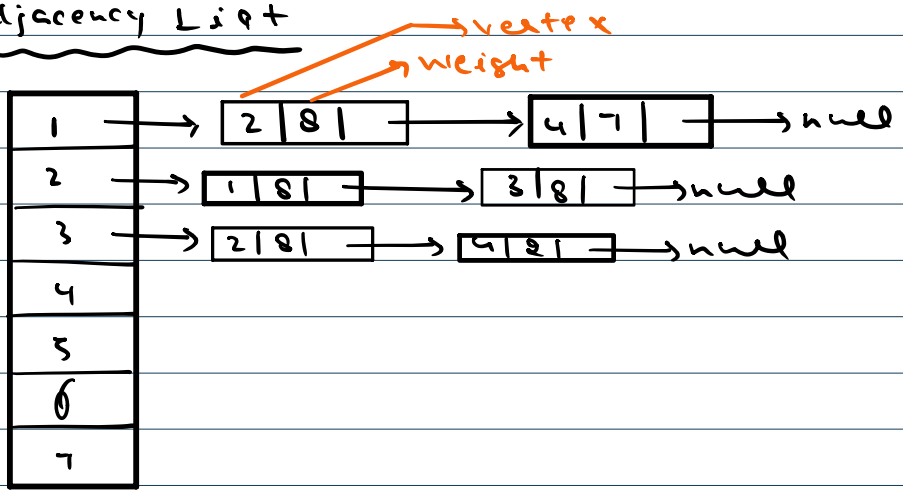
Graph → neighbour relation

Adjacency matrix

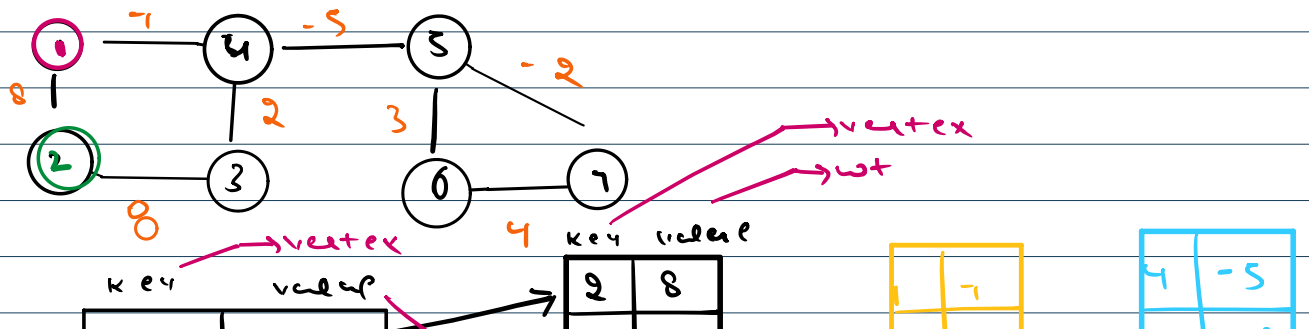
	1	2	3	4	5	6	7
1	0	8	0	7	0	0	0
2	8	0	8	0	0	0	0
3							
4							
5							
6							
7							

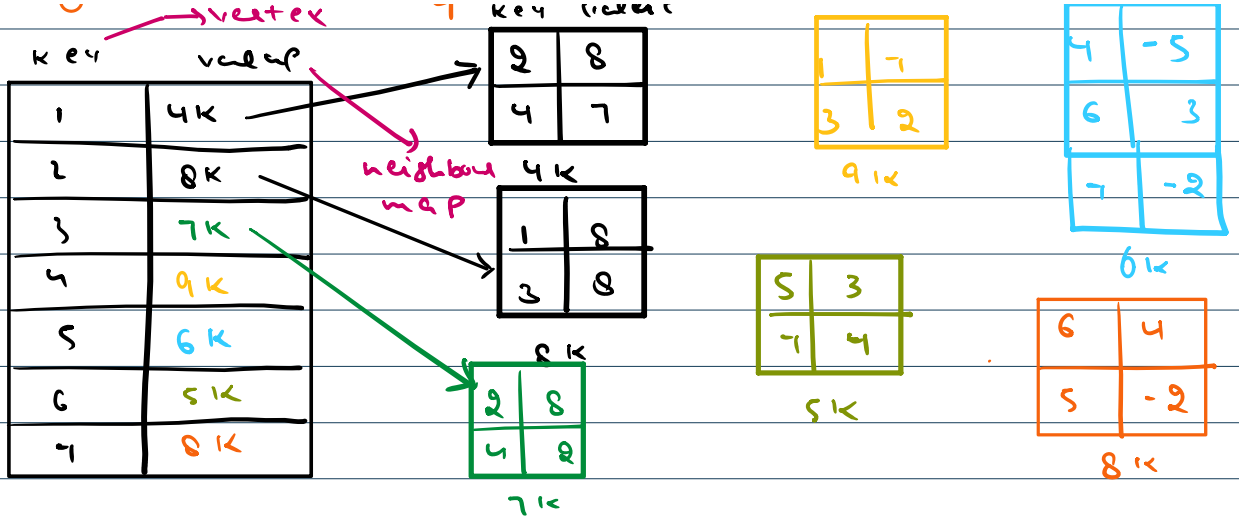


Adjacency List



Adjacency map





Determine whether a path exists between two vertices in a graph or not ?

source → 1

target → 7